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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/994,476	11/26/2001	Ari Juels	RSA-502AUS	7236

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EXAMINER
WILLIAMS, JEFFERY L

ART UNIT	PAPER NUMBER
2137	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/994,476	JUELS ET AL.	
	Examiner	Art Unit	
	Jeffery Williams	2137	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 May 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1, 2, 4 – 28, and 38 – 45* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 2, 4 – 8, 11-15,17-28,38-45* is/are rejected.

7)☐ Claim(s) *9,10,16* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This action is in response to the communication filed on 7/14/06.

All objections and rejections not set forth below have been withdrawn.

Claims 1, 2, 4 – 28, and 38 – 44 are pending.

Claim Objections

Claims 9, 10, and 16 are objected to for being dependent upon a rejected claim.

Appropriate correction is required.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 38 and 39 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Regarding claims 38 and 39, these claims comprise essentially computer instructions upon a readable medium such as carrier waves. As such, such claims are rejected for not being tangible.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 17 ,18, 19, 38, 40, 41, 43, and 45 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. Regarding these claims, the applicant recites forming an order invariant commitment. The claims may comprise encoding a sequence, however, they omit that steps of creating order invariance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 4 – 8, 11, 12, 14 – 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Juels et al. (Juels), "A Fuzzy Commitment Scheme".

Regarding claim 1, Juels discloses:

(a) receiving a first input element comprising a sequence of a least one value $(a_1, \ldots, a_n)$ *from a predetermined set* (pg. 32-33, "example 2", par. 2);

(b) generating a codeword of an error-correcting code for generating the commitment (pg. 32-33, "example 2", par. 1, 2);

(c) constructing a first sequence of coordinate sets (x_i, y_i)*, for i in {1,...n}, each of the coordinate sets having a first value* (x_i) *corresponding to a representation of an associated one* (a_i) *of the at least one value of the first input element and a second value* (y_i) *corresponding to a symbol in the codeword, wherein the symbol corresponds to the* x_i*th symbol in the codeword, wherein an order-invariant fuzzy commitment is formed, the commitment having the property that it may be algorithmically combined with at least one set of values comprising at least one value of the first input element so as to yield the codeword* (pg. 32-33, "example 2", par. 2).

outputting the first sequence (pg. 32-33, "example 2", par. 2 – the sequence is stored).

Regarding claim 2, Juels discloses:

wherein the representation of the first value in the first sequence of coordinate set is an integer representation (pg. 31, section 4.1, par. 1).

Regarding claims 4 and 5, Juels discloses deriving the first input element from biometric measurements (pg. 29, section 2.1).

Regarding claims 6 – 8, Juels discloses:

adding chaff to the first sequence, further including adding the chaff as sets of pairs of the form (x,y) such that x does not lie in the input sequence and y is generated at random; further including adding the chaff as sets of pairs of the form (x,y) such that one or more values x do lie in the input sequence and y is generated at random (pg. 31, section 3.1, par. 3, section 4.1, par. 2; pg. 32, col 1, par. 1,2).

Regarding claim 11, Juels discloses:

further including applying a bijective function to an input secret to obtain the codeword for the symbol corresponding to the second value (pg. 30, section 3, par. 3).

Regarding claim 12, Juels discloses:

receiving a second input element including a second sequence of a least one value ($b_1,\ldots, b_m$) from the predetermined set; receiving the first sequence (pg. 32, col. 2, "x" " x' ");

constructing a derived set of values ($X'= x_1',\ldots, x_{m'}$) representing respectively the at least one value ($b_1,\ldots, b_m$) in the second sequence; selecting a subset of the coordinate sets {(xi, yi)} in the first sequence (E) such that for each pair (x', y') in the subset, the first value in the pair (x') lies in the derived set of values (X') (pg. 32, col. 1, par. 2-4; pg. 32-33, "example 2");

applying an error-correcting function to the subset (pg. 32, col. 1, par. 3,4).

Regarding claims 13, Juels discloses:

wherein the error-correcting function includes a Reed-Solomon code (pg. 34, col. 2).

Regarding claim 14, Juels discloses:

selecting a polynomial to generate the codeword (pg. 32, "example 2"; pg. 33, section 5.1).

Regarding claims 15, Juels discloses:

utilizing a decodable design for decommitting the order-invariant commitment (pg. 34, section 5.2).

Regarding claims 17 – 28, and 38 – 45, they comprise essentially similar limitations, and they are rejected, at least for the same reasons as the claims above.

Response to Arguments

Applicant's arguments with respect to the pending claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

See Notice of References Cited.

A shortened statutory period for reply is set to expire **3** months (not less than 90 days) from the mailing date of this communication.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffery Williams whose telephone number is (571) 272-7965. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Emmanuel Moise can be reached on (571) 272-3865. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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